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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/652,579	08/31/2000	Vishnu K. Agarwal	98-0616.13	4026

7590 12/05/2001  
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EXAMINER

EVERHART, CARIDAD

ART UNIT PAPER NUMBER

2825

DATE MAILED: 12/05/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/652,579

Applicant(s)

AGARWAL, VISHNU K.

Examiner

Caridad M. Everhart

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 45-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4,5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 45 and 46 are rejected under 35 U.S.C. 102(e) as being anticipated by Doi(JP8226381).

Doi discloses a method comprising the steps of forming a conductive layer, treating with silane, and forming a second conductive layer.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (US 5,552,339) in view of Yamazaki (JP 55011329, abstract only).

Hsieh discloses the steps of forming a conductor, exposing the conductor to dichlorosilane, and forming a second conductor(col. 2, lines 25-37 and 59-67).

Hsieh discloses dichlorosilane rather than silane.

Yamazaki is relied upon for its teaching of the equivalence of silane and dichlorosilane for the formation of amorphous silicon.

One of ordinary skill in the art would have been motivated to have substituted silane for the dichlorosilane in the process taught by Hsieh in view of the disclosure made by Yamazaki.

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6. Claim 47 is rejected under 35 U.S.C. 102(e) as being anticipated by Li (US 6,136,690).

Li discloses the steps of forming a conductive layer, treating with a plasma comprising H<sub>2</sub> and N<sub>2</sub>, and depositing a second conductive layer (abstract and col. 6, lines 51-65).

7. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz, et al (abstract) in view of IBM Tech. Discl. Bull. Vol. 33, No. 11, p. 352("IBM Discl.").

Schulz et al discloses the steps of forming a conductive layer, treating with an H<sub>2</sub> plasma, and treating with silane gas and forming a second conductive layer.

Schulz et al does not disclose H<sub>2</sub>/N<sub>2</sub>, although the suggestion that N<sub>2</sub> can be used is included in the disclosure in that N<sub>2</sub> is included with a different reducing gas as a possible treatment.

IBM Discl discloses that H<sub>2</sub> and N<sub>2</sub> in a plasma treatment is used before exposing a surface to silane.

One of ordinary skill in the art would have been motivated to have included N<sub>2</sub> in the plasma treatment of the surface taught by Schulz et al in view of the IBM Discl because Schulz et al contained the suggestion of N<sub>2</sub> inclusion in a reducing plasma.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Everhart whose telephone number is (703) 308-3455. The examiner can normally be reached on Mon.-Fri. from 9:00 to 4:30..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith, can be reached on (703) 308-1323. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

C. Everhart

November 7, 2001

*C. Everhart*  
CARIDAD EVERHART  
PRIMARY EXAMINER